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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/710,667 | 07/28/2004 | Wen-Chi Chang | ACMP0146USA | 4666 |
| 27765 | 7590 | 10/13/2006 | EXAMINER | |
| NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION P.O. BOX 506 MERRIFIELD, VA 22116 | | | UHLENHAKE, JASON S | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2853 | |

DATE MAILED: 10/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 10/710,667 | Applicant(s) CHANG, WEN-CHI | |
| | Examiner Jason Uhlenhake | Art Unit 2853 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 4-6 and 9-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7, 8 and 18-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>3/30/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Species I (Figures 3 and 4) in the reply filed on 9/05/2006 is acknowledged.

Claims 4-6, and 9-17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 9/05/2006.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, and 18-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujimori (U.S. Pub. 2003/0016260).

Fujimori discloses:

- ***regarding claim 1***, utilizing a plurality of test driving signals for driving the printhead to print a plurality of test patterns on a printing medium according to a test data (Paragraphs 0050, 0121-0122)
- selecting a test pattern with an optimal print quality from the test patterns; determining an optimal drive signal corresponding to the test pattern with the optimal

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print quality; utilizing the optimal driving signal to drive the printhead to print data

(Paragraph 0123)

- **regarding claim 2**, the printhead is an inkjet printhead, and the printhead respectively prints the test patterns on a plurality of swaths (forward pass and backward pass) (Figure 15; Paragraph 0120)

- **regarding claim 3**, wherein each of the test driving signals comprises a main printing pulse, and the main printing pulses of the test driving signals all have the same voltage level but different pulse widths (Figure 16; W2 is greater than W1)

- **regarding claim 18**, a printhead comprising a plurality of nozzles (Figure 4); a controller (control unit) electrically connected to the printhead for utilizing a plurality of driving signals to respectively drive at least a heating resistor of the printhead to print a plurality of test patterns on a printing medium (Figure 30, Paragraphs 0025, 0173)

- wherein the printing device selects an optimal driving signal that corresponds to a test pattern with an optimal print quality, and utilizes the optimal driving signal to drive the printhead to print data (Paragraph 0123)

- **regarding claim 19**, the printhead is an inkjet printhead (Paragraph 0005)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimori (U.S. Pub. 2003/0016260) in view of Otsuki et al (U.S. Pub. 2004/0080555)

Fujimori discloses all the claimed limitations above except for the following:

- ***regarding claim 7***, the test data corresponds to at least one straight line, and the test pattern with the optimal print quality is selected according to deviation values between the test patterns and the straight line

- ***regarding claim 8***, each of the test patterns is used to show a plurality of first color straight lines, the test pattern that has a minimum deviation value of the first color straight lines is selected to be the test pattern with the optimal print quality

Otsuki discloses:

- ***regarding claim 7***, the test data corresponds to at least one straight line, and the test pattern with the optimal print quality is selected according to deviation values between the test patterns and the straight line (Paragraphs 0106, 0108)

- ***regarding claim 8***, each of the test patterns is used to show a plurality of first color straight lines, the test pattern that has a minimum deviation value of the first color straight lines is selected to be the test pattern with the optimal print quality (Paragraphs 0106 – 0108)

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of Otsuki into the device of Fujimori, for the purpose of correcting positional deviation between forward and reverse passes.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimori (U.S. Pub. 2003/0016260) in view of Underwood et al (U.S. Pat. 7,054,034)

Fujimori does not disclose expressly the following:

- ***regarding claim 20***, an image-capturing module electrically connected to the controller for capturing a plurality of images corresponding to the test patterns, wherein the controller selects a test pattern from the test patterns to be the test pattern with the optimal print quality according to the images

Underwood discloses:

- ***regarding claim 20***, an image-capturing module electrically connected to the controller (132) for capturing a plurality of images corresponding to the test patterns, wherein the controller selects a test pattern from the test patterns to be the test pattern with the optimal print quality according to the images (Column 8, Lines 14-24)

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of Underwood into the device of Fujimori, for the purpose of improving the quality of printing

Claim 21 rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimori (U.S. Pub. 2003/0016260) as modified by Underwood et al (U.S. Pat. 7,054,034) as applied to claim 18 above, and further in view of Otsuki et al (U.S. Pub. 2004/0080555)

Fujimori as modified by Underwood discloses all the claimed limitations above except for the following:

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- **regarding claim 21**, the test pattern is capable of printing a plurality of first color straight lines, and the controller selects a pattern that has a minimum deviation value of the first color straight lines to be the test pattern with the optimal print quality

Underwood discloses:

- **regarding claim 21**, controller selecting a pattern with optimal print quality
(Column 8, Lines 14-24)

Otsuki discloses:

- **regarding claim 21**, the test pattern is capable of printing a plurality of first color straight lines, and selecting a pattern that has a minimum deviation value of the first color straight lines to be the test pattern with the optimal print quality
(Paragraphs 0106-0108)

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of Otsuki into the device of Fujimori as modified by Underwood, for the purpose of correcting positional deviation between forward and reverse passes.


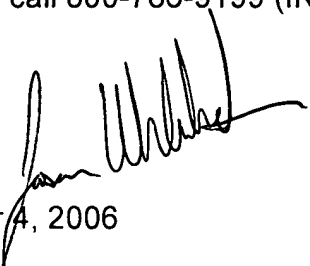
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Uhlenhake whose telephone number is (571) 272-5916. The examiner can normally be reached on Monday - Friday 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JSU
October 4, 2006



STEPHEN MEIER
SUPERVISORY PATENT EXAMINER